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Research article

Education

ANALYSES ON PROGRAMME OUTCOMES MEASUREMENTS FOR CONTINUOUS QUALITY IMPROVEMENT OF AN UNDERGRADUATE ENGINEERING PROGRAMME

本科生工程项目持续质量改进的项目成果测量分析

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Abstract

This article discusses new methods for the analyses of program outcome measurements of an engineering undergraduate program, enabling a robust effort to continually improve the quality of the program. The analyses were conducted on an undergraduate engineering program at University Malaysia Sarawak (UNIMAS), based on program outcome achievements of 80 students undertaking selected courses from 2015–2019. Three techniques were utilized: i.e., graphical visualization of data using boxplots, association analysis using Spearman's rank correlation coefficient, and consistency analysis using Cronbach's alpha. Using these techniques, the authors identified trends among the courses measuring the same program outcome. Boxplots are very effective in gaining an overview of the achievements of courses measuring the same program outcome, and in highlighting outliers and anomalies in the data. It was also found that the Cronbach's alpha result is coherent with that of the rank correlation coefficient. The techniques reported in this study can be applied to enhance data analysis for quality improvement of any academic program focusing on outcome-based education. Therefore, the study presented in this paper is both relevant and valuable to engineering programs working towards obtaining international accreditation.

Keywords: Outcome-Based Education, Engineering Education, Continuous Quality Improvement, Correlation Coefficient, Consistency Analysis

摘要 本文讨论了用于分析工程学本科课程的课程结果测量的新方法，从而为不断提高课程质量做出了有力的努力。这项分析是根据砂拉越大学（UNIMAS）的一项本科工程课程进行的，该课程

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